

122. Notes on the Cercaria of the Pearl Oyster.

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In 1927 the senior author received from Mr. Masao Tanaka, a member of the Mikimoto Pearl Oyster Culture Station at Tatokujima, Mie Prefecture, some specimens of pearl oyster which were heavily infected with *Bucephale cercariae*. This cercaria is a terrible parasite of the pearl oyster and was having serious effects on the formation of the pearl. In the summers of 1932 and 33 we had opportunities to examine the Cercaria in living condition at Wagu and Goza near Tatokujima, the materials being supplied by Mr. M. Tanaka. Before entering upon description of this Cercaria, we wish to express our sincere thanks to him.

Bucephalus margaritae n. sp.

The *Bucephalus* infests at first the gonad and liver of the pearl oyster *pictada martensi* Dunker. In the advanced stage the mantles, gills, palps and even adductor muscles and the whole tissue of the oyster become penetrated with the sporocysts. When the cercariae are fully developed and become ready to escape, they take a light yellowish colour though the young ones in the developmental stages are quite transparent and have no colour.

The cercaria has considerable power of extension and contraction especially in the tail. In the contracted state the length of the tail scarcely exceeds that of the body proper, but in the fully extended state it becomes of remarkable length (Fig. 1). The shape of the body is quite variable; Figs. 1 and 2 are sketches taken from the living specimens in the fully extended state under a cover slip.

The body of *Bucephalus* is elongate and is covered with minute scales. Under the skin there are refractive dermal gland cells. In the extended condition the body measures 0.23–0.31 mm in length and 0.1–0.11 mm in maximum breadth. The anterior end of the body is slightly pointed, terminating in a four-lipped invagination

which is succeeded by a mass of gland cells (Fig. 2. G.). The gland cells are refractive and open with long canals into the cavity at its basal part. Some of them which lie in the periphery and in a somewhat retracted position, open at the tip of the body around the cavity. The pharynx lies in the beginning part of the last third of the body and opens on the ventral surface with a short prepharynx. The pharynx measures 0.022 mm in diameter. The oesophagus rises from the pharynx and proceeds antieriad for a short distance, and is succeeded by an intestinal caecum which soon bend back on the dorsal side of the oesophagus terminating at about the hind level of the pharynx.

The excretory vesicle is not straight, and extends from near the posterior end of the body to about the central level of the pharynx. In the stained preparation we can distinguish four compact cell masses which denote the rudiments of testes, ovary and cirrus pouch, situated behind the pharynx. But in the living specimens these rudiments are concealed by large plasma-rich cells and can not be detected.

The tail varies in shape according to the stage of development. The completely developed tail as shown in Figs. 1 and 2 consists of basal enlarged part and a filamentous long part. The basal part is directly connected to the body proper and

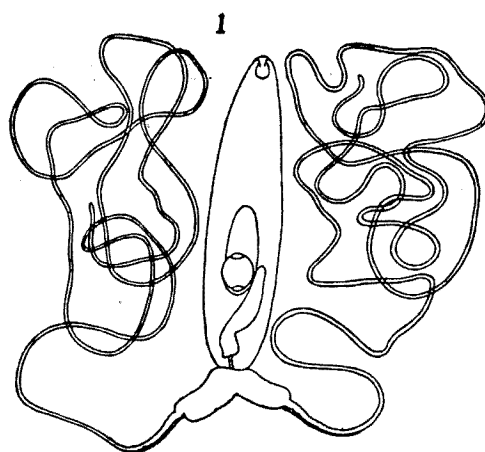


Fig. 1. *Bucephalus margaritae*, ventral view, drawn from live specimen in fully extended state with the aid of a camera lucida. $\times 120$.

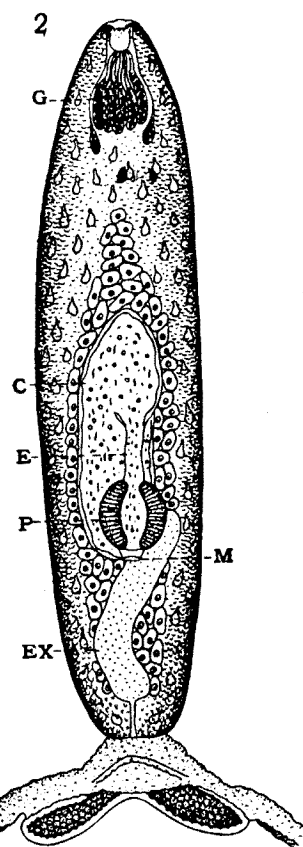


Fig. 2. Body proper and the basal part of tail, from live specimen. C caecum, E oesophagus, EX excretory vesicle, M mouth-opening, P pharynx. $\times 300$.

has a firm thickened wall. At the posterior or inner side of the basal part there is a thick-walled lamella somewhat wing or saddle-shaped. The lamella is mainly composed of refractive rounded granules.

This *Bucephalus* is closely related to *Bucephalus haimeanus* reported from the oyster in America but differs from it in the position of the pharynx and in the shape and development of the tail. In *B. haimeanus* the pharynx lies in the anterior half of the body.

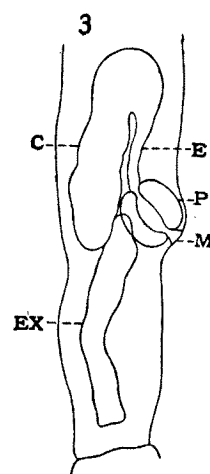


Fig. 3.

Side view, showing the opening of the mouth. $\times 300$.

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